

NON-PUBLIC?: N
ACCESSION #: 8908010251
LICENSEE EVENT REPORT (LER)

FACILITY NAME: CRYSTAL RIVER UNIT 3 PAGE: 1 OF 3

DOCKET NUMBER: 05000302

TITLE: Failed Current Transformer Caused Separation from Normal Offsite
Power Source
EVENT DATE: 06/29/89 LER #: 89-025-00 REPORT DATE: 07/27/89

OPERATING MODE: 3 POWER LEVEL: 000

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: L.W. Moffatt, Nuclear Safety Supervisor TELEPHONE: 904-795-6486

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE TO NPRDS:

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

On June 29, 1989, Crystal River Unit 3 was in HOT SHUTDOWN (MODE 3), cooling down to perform maintenance on one of the two Emergency Diesel Generators (EDG). An electrical storm was in progress in the area. At 2015, the plant separated from its normal offsite power source.

The operable EDG automatically started and reenergized the "A" 4160V Engineered Safeguards (ES) Bus. Two minutes after separation from the normal offsite power source, operators aligned power from a second offsite source to the "B" 4160 ES Bus, and energized the bus. Operators restored the normal offsite power source at 2137. The reactor was cooled by natural circulation flow for approximately two hours during the event.

Separation from the normal offsite power source occurred due to an electric fault in the 230KV switchboard. There was insufficient data available to determine the exact cause of the electric fault. However, it is believed that the event was caused by lightning.

END OF ABSTRACT

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EVENT DESCRIPTION

On June 29, 1989, Crystal River Unit 3 (CR3) was in HOT SHUTDOWN (MODE 3), cooling down for maintenance. An electrical storm was in progress in the area. The "B" Emergency Diesel Generator EK,ENG! (EDG), one of two, was out of service for maintenance. At 2015, an electrical fault occurred in the 230KV switchyard FK!. When the fault occurred, the circuit breakers FK,BKR! which feed the CR3 Startup Transformer FK,XFMR! opened, interrupting the normal offsite power supply to CR3.

The "A" EDG automatically started and reenergized the "A" 4160V Engineered Safeguards (ES) Bus EB,BU!. Two minutes after interruption of the normal offsite power source, operators aligned power from the Crystal River Units 1 and 2 Startup Transformer FK,XFMR! to the "B" 4160V ES Bus, and reenergized the bus.

Before the event, operators were maintaining one group of control rods AA,ROD! fully withdrawn to provide trippable reactivity during cooldown. When power interruption occurred, the control rods inserted into the reactor AC! due to loss of power.

The three operating Reactor Cooldown Pumps AB,P! tripped following separation from offsite power. The plant was cooled by natural circulation flow for two hours.

The operating Main Feedwater Pump tripped following separation from offsite power. Operators manually started the motor driven Emergency Feedwater pump BA,P! as soon as power for the pump was available. The pump is normally powered from the "A" 4160V ES Bus. Power from the pump was available when the "A" EDG reenergized the "A" 4160V ES Bus. Operators manually controlled the Emergency Feedwater flow and Steam Generator fill rate during the event.

Condenser Circulating Water Pumps KE,P! stopped following separation from offsite power. Without flow from these pumps, the Main Condenser SG,COND! began to slowly lose vacuum. This eliminated the condenser as a heat sink, and forced operators to steam the Steam Generators AB,SG! to atmosphere.

At 2137, operators restored power to the plant via the CR3 Startup Transformer. This allowed operators to restore power to loads not powered from ES buses. Operators started the Reactor Coolant Pumps at 2215.

Cause

Utility technicians examined equipment in the 230KV switchyard. They found a damaged Current Transformer FK,XCT! associated with one of the breakers that feeds the CR3 Startup Transformer. Damage was indicative of an electric fault. There was insufficient evidence to determine the exact cause of the fault. However, plant personnel suspect that the event was caused by lightning.

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The electric fault caused the 230KV protective relaying system to open the breakers feeding the CR3 Startup Transformer in order to clear the fault. This caused interruption of the normal offsite power feed to CR3.

CORRECTIVE ACTION

Technicians replaced the damaged Current Transformer. No other corrective actions would be possible or appropriate.

EVENT ANALYSIS

This event did not threaten the health or safety of the public or of plant personnel. Natural circulation flow and the Emergency Feedwater System provided adequate core cooling. The reactor was subcritical at the time of the event. Adequate shutdown margin was maintained at all times.

PREVIOUS SIMILAR OCCURRENCES

This is the fourth interruption of the normal offsite power supply at CR3.

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Florida
Power
Corporation

July 27, 1989
3F0789-28

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Subject: Crystal River Unit 3
Docket No. 50-302

Operating License No. DPR-72
Licensee Event Report No. 89-025

Dear Sir:

Enclosed is Licensee Event Report (LER) 89-025 which is submitted in accordance with 10 CFR 50.73.

Should there be any questions, please contact this office.

Yours very truly,

Rolf C. Widell
Director, Nuclear Operations Site Support

WLR:mag

Enclosure

xc: Regional Administrator, Region II
Senior Resident Inspector

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